Billing Code: 4163-18-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[Program Announcement 01022]

Epidemiology and Laboratory Capacity for Infectious Diseases

Notice of Availability of Funds

A. Purpose

The Centers for Disease Control and Prevention (CDC) announces the availability of fiscal year (FY) 2001 funds for a cooperative agreement program to promote adequate capacity of local, State, and national efforts for epidemiologic and laboratory surveillance and response for infectious diseases. This program addresses the “Healthy People 2010" focus area of Immunization and Infectious Diseases. For the conference copy of “Healthy People 2010", visit the internet site: <http://www.health.gov/healthypeople>

The purpose of the Epidemiology and Laboratory Capacity in Infectious Diseases (ELC) program is to assist State and eligible local public health agencies in strengthening basic epidemiologic and laboratory capacity to address infectious

disease threats with a focus on notifiable diseases, food-, water-, and vector-borne diseases, vaccine-preventable diseases, and drug-resistant infections. Awards are intended to support activities that enhance the ability of a program to identify and monitor the occurrence of infectious diseases of public health importance in a community, characterize disease determinants, identify and respond to disease outbreaks, use public health data for priority setting and policy development, and assess the effectiveness of activities. Strengthening collaboration between laboratory and epidemiology practice is seen as a crucial component of this program.

This program is designed to support grantees in a variety of ways. For example, in health departments where gaps in personnel and equipment are identified as major barriers to effective surveillance and response, the ELC program can provide resources to hire staff or purchase necessary equipment. Funds can also be used to enhance ongoing activities.

B. Eligible Applicants

Limited Competition

Assistance will be provided only to the health departments of States or their bona fide agents, including the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, federally recognized Indian tribal governments, the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau. In addition, official public health agencies of city governments with jurisdictional populations greater than 1,500,000 or county governments with jurisdictional populations greater than 8,000,000 (based on 1990 census data) are eligible to apply.

The ELC program was initiated in 1995 with Program Announcement 95043 and expanded in 1997 and 1999 with Program Announcements 97020 and 99032, respectively. A total of 39 state and 4 local health departments have been funded to date. This announcement is a further expansion of the ELC program and is intended to add new eligible applicants not already funded in the program. States, counties, and cities currently funded under the ELC program are not eligible to apply under this program announcement.

C. Availability of Funds

Approximately $5,250,000 is available in FY 2001 to fund approximately 15 awards. It is expected that the average award (total direct and indirect costs) will be $350,000. Individual awards may range from $100,000 to $500,000. It is expected that the awards will begin on or about April 1, 2001, and will be made for a 12-month budget period within a project period of up to five years. Funding estimates may change.

Continuation awards within an approved project period will be made on the basis of satisfactory progress as evidenced by required reports and the availability of funds.

Recipient Financial Participation

Although a requirement for matching funds is not a condition for receiving an award under this cooperative agreement program, applicants must document the non-Federal human and fiscal resources that will be available to conduct activities outlined in the proposal. Federal funds cannot be used to replace or supplant existing State and local support. See Evaluation Criteria (paragraph 6: Budget) for additional information.

D. Program Requirements

In conducting activities to achieve the purpose of this program, the recipient will be responsible for the activities listed under 1. (Recipient Activities) and CDC will be responsible for the activities listed under 2. (CDC Activities).

1. Recipient Activities

a. Enhance local capacity for gathering and evaluating infectious disease surveillance data, detecting and investigating outbreaks, and using surveillance data for public health practice and clinical follow-up. Applicants should analyze their current surveillance infrastructure, identify gaps in core epidemiologic and laboratory capacity, and develop applications to this program announcement that address the needs of their respective health jurisdictions.

National priority program areas are briefly described below and are examples of activities that would be appropriate to propose under this program announcement. Applicants are encouraged to consider activities in these areas, yet there is no requirement to do so. Details and example

activities for each are provided as Attachments in the Application Kit.

(1) Antimicrobial Resistance (Attachment 2)
Develop or improve health department capacity for surveillance, prevention, and control of antimicrobial resistant infections.

(2) Food-borne Disease (Attachment 3)
Enhance capacity for investigation, control, and reporting of foodborne disease outbreaks and improve laboratory-based surveillance for emerging foodborne pathogens.

(3) Hepatitis (Attachment 4)
(a) Develop capacity to prevent and control hepatitis C virus (HCV) infection through activities that are integrated into existing public health prevention services and programs.
(b) Enhance capacity for surveillance of chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infection.

(4) Influenza (Attachment 5)

Develop and enhance capacity for influenza surveillance and response.

(5) National Electronic Disease Surveillance System (NEDSS) Assessment and Planning (Attachment 6)

Assess current information systems personnel and technical infrastructure and develop a plan for the implementation of the NEDSS systems architecture (intended for applicants that did not receive any NEDSS funding from CDC in FY 2000).

(6) West Nile Virus (Attachment 7)

Develop and implement effective surveillance, prevention, and control of West Nile virus and other arboviruses that occur in the U.S.

b. Ensure appropriate representation at planning and priority-setting meetings organized for recipients of this cooperative agreement program, including sending two representatives to the International

Conference on Emerging Infections scheduled for March 2002 in Atlanta.

c. If a proposed project involves research on human participants, ensure appropriate Independent Review Board (IRB) review.

2. CDC Activities

a. Provide consultation and assistance in enhancing local epidemiologic and laboratory capacity for surveillance and response for infectious diseases.

b. Assist in monitoring and evaluating scientific and operational accomplishments and progress in achieving the purpose of this program.

c. Provide national coordination of activities where appropriate.

d. If during the project period research involving human subjects should be conducted and if CDC scientists will be co-investigators in that research, assist in the development of a research protocol for IRB review by all institutions participating in the research project. The CDC IRB will review and approve the protocol initially and

on at least an annual basis until the research project is completed.

E. Application Content

Letter of Intent (LOI)

In order to assist CDC in planning and executing the evaluation of applications submitted under this announcement, all parties intending to submit an application are requested to inform CDC of their intention to do so not later than February 9, 2001. Notification should include: (1) name and address of the institution, (2) name, address and telephone number of the contact person, and (3) a list of the activities/areas that will be addressed in the application. This letter of intent will not be used in evaluation of the application. Notification should be provided by facsimile, postal mail, or E-mail, to the Grants Management Specialist identified in the “Where to Obtain Additional Information” section of this announcement”.

Application

Use the information in this section and in the Program Requirements, Other Requirements, and Evaluation Criteria sections to develop the application content.

Your application will be evaluated on the criteria listed in Section G., so it is important that your narrative follow the criteria in the order presented.

The application narrative (excluding budget, budget narrative, appendices, and required forms) must not exceed 20 single-spaced pages, printed on one side, with one inch margins, a font size no smaller than 10, and on white 8.5" x 11" paper. All pages must be clearly numbered, a complete index to the application and its appendices must be included, and the required original and two copies must be submitted unstapled and unbound (i.e., so it can be easily fed through an automatic document feed copier).

To the extent possible, application narratives and budgets should clearly delineate separate and distinct program areas or groups of activities.

If any proposed activities involve human subjects research, include plans to assure that appropriate Institutional Review Board (IRB) approval is obtained. Include protocols and IRB review/approval status if available.

If indirect costs are being charged, include a copy of your organization's most current indirect cost rate agreement or cost allocation plan.

Letters of support can be included if applicants anticipate the participation of other organizations or political subdivisions in conducting proposed activities. Specific roles and responsibilities should be delineated. Do NOT include any letters of support from CDC. CDC assistance will be provided to all recipients as described in CDC Activities, above.

F. **Submission and Deadline**

Letter of Intent (LOI)

The Letter of Intent (LOI) should be submitted on or before February 9, 2001 and can be provided by facsimile, postal mail, or E-mail to the Grants Management Specialist identified in the "Where to Obtain Additional Information" section of this announcement. Your letter of intent should include: (1) name and address of the institution, (2) name, address, and telephone number of the contact person, and (3) a list of the activities/areas that will be addressed in the application.

Application

Submit the original and two copies of CDC 0.1246(E). Forms are in the application kit. Submit the application to the Grants Management Specialist identified in the "Where to Obtain Additional Information" section of this announcement, on or before February 23, 2001.

Deadline: Applications shall be considered as meeting the deadline if they are either:

(a) Received on or before the deadline date; or

(b) Sent on or before the deadline date and received in time for submission to the independent review group. (Applicants must request a legibly dated U.S. Postal Service postmark or obtain a legibly dated receipt from a commercial carrier or U.S. Postal Service. Private metered postmarks shall not be acceptable as proof of timely mailing.)

Late Applications: Applications which do not meet the criteria in (a) or (b) above are considered late applications, will not be considered, and will be returned to the applicant.

G. **Evaluation Criteria**

Each application will be evaluated individually against the following criteria by an independent review group appointed by CDC.

1. Description of the population under surveillance, either the State or other appropriate jurisdiction (if an applicant is a county, city, or other agency) (5 points). Extent to which the application provides information on the population size, demographic characteristics, geographic distribution, racial/ethnic makeup, and health care delivery systems.

2. Description of existing public health infectious disease epidemiology, laboratory, and information systems capacity (15 points).

   Extent to which the applicant:

   a. Describes existing infectious disease surveillance and response activities, including reporting requirements, spectrum of laboratory specimen testing performed, degree of automation of laboratory and epidemiologic information management, and public health response capacity.

b. Provides information on existing staffing, management, material and equipment investment, training, space, and financial support of laboratory and epidemiologic capacity for public health surveillance and response for infectious diseases.

c. Describes current collaboration between its epidemiology and laboratory programs in surveillance and response including the existence of, or potential for, integrated uses of surveillance data;

d. Describes current or previous collaborative relationships with clinical laboratories, local health agencies, academic medicine groups, and health care practitioners, including HMOs or managed care providers; and demonstrates the potential of these relationships for enhanced surveillance and public health response activities.

3. Identification of areas of need (gaps) in surveillance and response for infectious diseases and understanding of the objectives of this cooperative agreement program (20 points).

The extent to which the applicant outlines State and local needs in epidemiology, laboratory, and/or information systems capacity for public health surveillance and response for infectious diseases.

4. Operational Plan (Note: Provide a detailed description of first year activities only and briefly describe future year activities)(45 points). Extent to which the proposed plan:

   a. Outlines activities that clearly address the applicant's identified needs in capacity and that are appropriate for any specific diseases, conditions, and/or national priority program areas addressed by the applicant.

   b. Describes steps to be taken to facilitate and strengthen collaboration between epidemiology and laboratory practice.

   c. Includes current letters of support from participating agencies, institutions, and organizations indicating their willingness to participate in the activities as proposed in the operational plan.

   d. If any research involving human subjects is proposed, has met the CDC Policy requirements

regarding the inclusion of women, ethnic, and racial groups in any proposed research. This includes:

(1) The proposed plan for the inclusion of both sexes and racial and ethnic minority populations for appropriate representation.

(2) The proposed justification when representation is limited or absent.

(3) A statement as to whether the design of the study is adequate to measure differences when warranted.

(4) A statement as to whether the plans for recruitment and outreach for study participants include the process of establishing partnerships with community(ies) and recognition of mutual benefits.

5. Plan for monitoring and evaluation (15 points). The extent to which the applicant describes a detailed plan for monitoring the implementation of the activities and evaluating the extent to which the proposed activities strengthen local and national epidemiologic and laboratory capacity for infectious diseases.

6. Budget (not scored)

   a. A detailed budget with a line-item justification and any other information to demonstrate that the request for assistance is consistent with the purpose and objectives of this cooperative agreement program.

   b. Although matching funds are not a condition for receiving an award under this program, include in the budget, a separate line-item accounting of non-Federal contributions (funding, personnel, and other resources) that will be directly allocated to the proposed activities. Identify any non-applicant sources of these contributions.

   c. If requesting funds for any contractual activities, provide the following information for each contract: (1) Name of proposed contractor, (2) breakdown and justification for estimated costs, (3) description and scope of activities to be performed by contractor, (4) period of performance, (5) method of contractor selection (e.g., sole-source or competitive solicitation), and (6) method of accountability.

7. Human Subjects: (Not Scored)

If any research involving human subjects is proposed, does the application adequately address the requirements of Title 45 CFR Part 46 for the protection of human subjects?

H. Other Requirements

Technical Reporting Requirements

Provide CDC with original plus two copies of:

1. progress reports (annual), no more than 90 days after the end of the budget period;
2. financial status report, no more than 90 days after the end of the budget period; and
3. Final Financial Status and Performance reports, no more than 90 days after the end of the project period.

Send all reports to the Grants Management Specialist identified in the “Where to Obtain Additional Information” section of this announcement.

Public Health Surveillance and Information Systems

To modernize and enhance public health surveillance and information systems, CDC and its public health partners

are implementing the NEDSS. CDC's NEDSS implementation strategies include ensuring that relevant activities funded through its various cooperative agreement programs will be consistent with the functional and technical specifications of the NEDSS information architecture (www.cdc.gov/od/hissb/docs.htm). As part of the terms of this program announcement, grantees agree to evaluate current activities with respect to the NEDSS information systems architecture; plan how to modify these activities, if necessary, so that they are consistent with NEDSS specifications; and, if possible, begin to implement NEDSS specifications in relevant activities.

The following additional requirements are applicable to this program. For a complete description of each, see Attachment 1 in the application kit.

AR-1 Human Subjects Requirements

AR-2 Requirements for Inclusion of Women and Racial and Ethnic Minorities in Research

AR-7 Executive Order 12372 Review

AR-10 Smoke-Free Workplace Requirements

AR-11 Healthy People 2010

AR-12 Lobbying Restrictions

I. Authority and Catalog of Federal Domestic Assistance Number

This program is authorized under the Public Health Service Act Sections 301(a)[42 U.S.C. 241(a)] and 317(k)(2)[42 U.S.C. 247b(k)(2)], as amended. The Catalog of Federal Domestic Assistance number is 93.283.

J. Where to Obtain Additional Information

This and other CDC announcements can be found on the CDC home page Internet address - <http://www.cdc.gov>. Click on "Funding" then "Grants and Cooperative Agreements."

If you have questions after reviewing the contents of all the documents, business management technical assistance may be obtained from:

Gladys Gissentanna, Grants Management Specialist
Grants Management Branch, Procurement and Grants Office
Centers for Disease Control and Prevention (CDC)
2920 Brandywine Road, Room 3000
Atlanta, Georgia 30341-5539
Telephone (770) 488-2753
Email address : gcg4@cdc.gov

For program technical assistance, contact:

Deborah A. Deppe, M.P.A.

National Center for Infectious Diseases

Mailstop C12

Centers for Disease Control and Prevention

Atlanta, GA 30333

Telephone (404) 639-4668

E-mail address: dad1@cdc.gov

Dated:

John L. Williams
Director
Procurement and Grants Office
Centers for Disease Control
and Prevention (CDC)

ATTACHMENT 2
ANTIMICROBIAL RESISTANCE

The purpose is to develop or improve state and local health department capacity for surveillance, prevention, and control of antimicrobial resistant infections. Activities should be related to action items in the Public Health Action Plan to Combat Antimicrobial Resistance (Part 1: Domestic Issues):

> Draft Public Health Action Plan to Combat Antimicrobial Resistance Part I: Domestic Issues
> http://www.cdc.gov/drugresistance/actionplan/index.htm
> (Federal Register: June 22, 2000 (Volume 65, Number 121)] [Page 38832-38833][Federal Register: June 30, 2000 (Volume 65, Number 127)][Page 40668]

[Note: A final version of the Action Plan may be available before applications are due. There will be wording and numbering changes in specific action items. Applicants are encouraged to refer to the URL above while preparing the application to ensure that, to the extent possible, references are to the final version of the Action Plan.]

Example Activities:

1. Surveillance: Address one or more Surveillance action items in the Plan and include an explanation of how the proposal will help to address top priority action items 2 or 5 (development of a coordinated national plan to monitor antimicrobial resistance and patterns of antimicrobial use). The intent is to promote interactions between CDC and state and local health departments, that will result in the fulfillment of top priority action items 2 and 5 over an approximately 3 year period. Projects should include developing and implementing programs to meet state and local needs that are consistent with development of a national plan, that are or will lead to systems compatible with the National Electronic Disease Surveillance System (NEDSS), that are comparable among multiple states, and that lead to better understanding of state and local "core capacity" for antimicrobial resistance surveillance. In general, applications should address coordinated rather than disease or pathogen-specific projects.

2. Public Health Education Campaign: Address top priority action item 27 (public health education campaign) and/or 29 (assisting clinicians in appropriate prescribing). This may include a variety of projects as explained in the action items, e.g., state based campaigns that target prescribers and the public and development of tools to improve prescribing.

3. Clinical Laboratory Quality Assurance: Address one or more pertinent action items (e.g., 7, 9, 10) and include work by the State Public Health Laboratory and other partners to develop and promote training and proficiency testing among clinical laboratories in their states.

ATTACHMENT 3
FOODBORNE DISEASE

The purpose is to enhance capacity for investigation, control, and reporting of foodborne disease outbreaks and improve laboratory-based surveillance for emerging foodborne pathogens.

Example Activities:

1. Enhance capacity for investigation, control, and reporting of foodborne disease outbreaks

   A. Outbreak Investigations
      New surveillance tools have enhanced the recognition of foodborne disease outbreaks and have led to ever increasing demands on state and local health departments to conduct timely, effective, and cross-jurisdictional outbreak investigations. Obstacles to such investigations include insufficient personnel, the need for specialized training (e.g., in the analysis of epidemiological data related to clusters detected through PulseNet), and a lack of standardized data collection tools that facilitate sharing of data with other jurisdictions.

      Applicants may request support for an MPH-level epidemiologist dedicated to foodborne diseases and staff training in foodborne disease outbreaks

   B. Electronic Foodborne Outbreak Reporting System (EFORS)
      Since 1973, CDC has collected information on foodborne disease outbreaks from all causes through the Foodborne Disease Outbreak Surveillance System (FBOSS). The only national database of foodborne outbreaks, FBOSS has served as an important source of information for all agencies involved with food safety.
      Since its inception, FBOSS has been a paper-based system that has required extensive evaluation and coding of data before analysis. Delays have prevented the timely release of surveillance information and have decreased or delayed participation by state health departments. To address these limitations and take advantage of newer technology, CDC has been working to modernize the system for outbreak reporting. In October 1999, after consultation with state health departments, CDC released a revised foodborne outbreak reporting form that streamlines aspects of the

reporting process. At the same time, CDC has been working to replace the paper form with an internet-based reporting system known as the Electronic Foodborne Outbreak Reporting System (EFORS). An EFORS prototype has been developed and is currently being pilot tested in seven states. Ultimately, EFORS will be integrated with EpiX, an internet-based communication and early alert system under development by CDC.

Applicants may request support for travel, supplies, and computer equipment necessary to pilot conversion at the state and/or local level from paper-based or other reporting systems to electronic reporting through EFORS.

2. Improve laboratory-based surveillance for emerging foodborne pathogens

A. PulseNet

The PulseNet network has revolutionized foodborne disease surveillance by allowing near real-time DNA "fingerprinting" of foodborne pathogenic bacteria by state and local public health laboratories using rapid (one-day) and highly standardized PFGE protocols and by enabling the rapid comparison of these DNA "fingerprints" to a national database of "fingerprint" patterns for each foodborne bacterial pathogen. PulseNet makes rapid detection of clusters of foodborne illnesses possible and provides an early warning for public health investigation and intervention. For the system to function optimally, all laboratories on the network must perform PFGE typing of bacteria under surveillance (6 pathogens in FY2001) in a standardized and timely manner, analyze results, and transmit the results to the national database without delay.

Applicants not currently participating in PulseNet may request support to join the network and for performing real-time PFGE typing of foodborne pathogenic bacteria (e.g., supplies, additional equipment required to perform additional testing, and personnel needed to perform the laboratory tests in a timely manner). Where appropriate, proposals should include personnel to analyze PFGE data and follow-up on any clusters that are identified.

Applicants already participating as PulseNet Area Laboratories may request support for training and retraining of laboratory personnel and providing troubleshooting support and surge capacity for their service areas.

B. Surveillance for Shiga toxin-producing E. coli
Although E. coli O157:H7 is widely recognized as an important cause of foodborne illness in the United States, other serotypes of Shiga toxin-producing E. coli (non-O157 STEC) can also cause diarrhea, hemorrhagic colitis, hemolytic uremic syndrome (HUS), and death. Unlike E. coli O157:H7, these non-O157 STEC strains are not readily detected by simple culture methods. Consequently, little is known about their epidemiology or overall public health significance. The recent availability of commercial assays that can detect non-O157 STEC now makes efforts to monitor the prevalence of these organisms practical. With support from the National Food Safety Initiative, CDC recently began surveillance for non-O157 STEC in an effort to learn more about the importance of these organisms.

Applicants may request support to develop capacity to detect non-O157 STEC (i.e., if not already participating in the non-O157 surveillance system) and/or for evaluation of strategies for isolation of non-O157 STEC including transport/handling practices that can affect the isolation of non-O157 STEC.

C. Diagnosis of parasitic diseases through DPDx
DPDx uses state-of-the-art technology and communication to improve and update the level of expertise for diagnosis of foodborne and other parasitic diseases in the US. It uses “telediagnosis” - exchanging images captured from diagnostic specimens among laboratories for diagnostic assistance. Through DPDx, laboratories can transmit images to CDC and obtain answers for their inquiries in minutes to hours. This will allow laboratories to more efficiently address difficult diagnostic cases in normal or outbreak situations, and to disseminate information more rapidly. DPDx also provides training to laboratorians on diagnostic approaches, including telediagnosis.

Applicants may request support to develop capacity for telediagnosis through DPDx by purchasing necessary or upgrading existing equipment (a digital camera,

microscope, and computer) and participating in CDC training.

D. Capacity for molecular identification of foodborne parasites

Accurate and timely identification of foodborne and other parasites permits routine surveillance as well as rapid identification of outbreaks. Implementation of up-to-date molecular techniques in public health laboratories will provide more technological flexibility, prepare the public health laboratories for the imminent technological advancements in the area of diagnosis of parasitic diseases, and allow laboratories to accumulate molecular data on parasites.

Applicants may request support to purchase equipment and supplies (set ups for DNA extraction, thermocyclers) and for CDC training necessary to develop capacity for DNA extraction from stool and other samples (e.g. food) and to perform PCR.

ATTACHMENT 4
HEPATITIS PREVENTION AND CONTROL

Hepatitis C Virus (HCV) Prevention and Control

The purpose is to assist in the development, coordination, and evaluation of a program to prevent and control hepatitis C virus (HCV) infection that is integrated into existing public health prevention services and programs. Because HCV is bloodborne, its prevention and control should be integrated into settings that provide programs for prevention and control of other bloodborne virus infections (e.g., HBV, HIV). These settings include clinics for sexually transmitted diseases, drug treatment programs, HIV/AIDS counseling and testing sites, programs for high risk youth and corrections facilities. However, other innovative approaches to coordinate integrated hepatitis C program activities may be considered.

Applicants may request support for establishing a focus in the health department responsible for the management, networking, and technical expertise required for successful integration of hepatitis C prevention and control activities into existing disease surveillance activities and programs for the prevention of bloodborne viral infections. Activities may include: 1) identifying public health and clinical activities in which HCV counseling and testing should be incorporated, 2) ensuring training of health care professionals in effective hepatitis C prevention activities, 3) developing the capacity to provide HCV testing through public health or private diagnostic laboratories, 4) identifying the resources for hepatitis A and hepatitis B vaccination of at-risk persons; 5) identifying sources for appropriate medical referral of HCV positive persons, 6) ensuring appropriate surveillance for HCV infection which links to evaluation program activities, and 7) evaluating the effectiveness of HCV prevention activities.

Surveillance for Chronic HBV and/or HCV Infections

The purpose is to assist grantees in states with laws for laboratory reporting of chronic HBV infection (i.e., hepatitis B surface antigen [HBsAg] positive test results) and/or HCV infection (i.e., anti-HCV positive test results) in the development, implementation, and evaluation of surveillance systems to identify persons with chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infection. Funded projects should serve as models for use by other states with the ultimate goal of broad

implementation of surveillance for chronic HBV and HCV infection.

Database Development: Applicants without a database or with a database established for less than two years may request support for development of surveillance databases for HBV and HCV infection to ascertain the proportion of the estimated number of HBV and HCV infected persons that have been identified, risk factors for infection, and whether persons reported to the surveillance system have received appropriate prevention and medical services. Activities would include: Evaluate the effectiveness of current laboratory-based reporting systems for identifying chronic HBV and HCV infection. Establish mechanisms (e.g., direct reporting, sampling) to obtain demographic information, ascertain risk factors for infection, and determine type of prevention and medical services received by persons reported to the surveillance system. Assess the feasibility of collecting information on the cost and effectiveness of the implemented surveillance system.

Evaluation: Applicants with a fully functional surveillance database established for at least two years may request support to evaluate the effectiveness and utility of the surveillance system to determine (1) what proportion of the estimated number of HBV and HCV infected persons have been identified, (2) whether persons with selected risk factors are not being identified, and (3) whether persons reported to the state surveillance system have received appropriate prevention and medical services. Activities would include: Evaluate the effectiveness of current laboratory-based reporting systems for identifying chronic HBV and HCV infection. Establish mechanisms (e.g., direct reporting, sampling) to obtain demographic information, ascertain risk factors for infection, and determine type of prevention and medical services received by persons reported to the surveillance system. Assess the feasibility of collecting information on the cost and effectiveness of the implemented surveillance system. Evaluate the ability of the computerized databases to identify persons with HBV and HCV infection including determining what proportion of the estimated number of HBV and HCV infected persons have been identified, and whether persons with selected risk factors are not being identified. Evaluate the effectiveness of notification, counseling and referral for medical management of persons chronically infected with HBV and HCV.

ATTACHMENT 5
INFLUENZA SURVEILLANCE AND RESPONSE

The purpose is to assist grantees in developing and enhancing capacity for surveillance and response to influenza.

Example Activities:

1. Improve or maintain capacity to enhance collection of respiratory samples, culture specimens for influenza viruses, and type and subtype influenza isolates. The goal is to improve capacity to respond to both annual epidemics and possible pandemics. Applications should include performing testing of respiratory specimens submitted from your state's sentinel physician free of charge.

2. Expand and improve the U.S. Influenza Sentinel Physician Surveillance System. The national goal for expanding the Sentinel Physician Surveillance System is to enroll approximately 1,000 sentinel physicians (approximately one physician for every 250,000 population) who consistently provide reports during the influenza season. Applicants should identify an influenza surveillance coordinator who will be responsible for (a) recruiting and retaining sentinel physicians who will report each week (from October to May) on the number of cases of influenza-like illness and the total number of patients seen, (b) identifying who will submit respiratory specimens for influenza culture, and (c) interacting with CDC. A system of routine reporting of virologic isolates that can differentiate results of specimens submitted by sentinel physicians from other specimens is encouraged. Applicants are encouraged to establish systems that include mailing of respiratory specimens and testing of viral specimens at no charge to the participating physicians. Physicians should be encouraged to use the Internet to transmit surveillance data. For applicants in jurisdictions where virus isolation capacity and a sentinel physician system are well established, support may be requested for developing innovative and efficient approaches to influenza surveillance, including use of data from managed care organizations.

3. Year round influenza surveillance pilot projects. Grantees that have an established active sentinel physician network and perform virologic isolation for influenza viruses at the state laboratory may submit proposals to pilot year round surveillance with reporting of both sentinel physician and isolate testing results via the internet. Applications should incorporate sentinel physicians into the year round surveillance plan, describe criteria for testing specimens, and describe the mechanism for reporting results.

ATTACHMENT 6
NEDSS - ASSESSMENT AND PLANNING

The purpose is to support National Electronic Disease Surveillance System Assessment and Planning activities ONLY. Under this announcement, applicants that did not receive any NEDSS funding in FY2000 (i.e., through the Emerging Infections Program or CSTE cooperative agreements) are eligible to apply for NEDSS Assessment and Planning support.

Public health surveillance is a cornerstone of public health decision-making and practice at local, state, and national levels. Surveillance provides information crucial to monitoring the health of the public, identifying public health problems and priorities, taking public health action to prevent further illness, and evaluating the effectiveness of these actions. At the time of its founding in 1946, CDC's primary emphasis was on malaria and other tropical diseases. Since then, CDC's responsibilities have broadened and today it focuses on prevention of infectious diseases, chronic diseases, injuries, workplace hazards, birth defects and disabilities, and environmental hazards. CDC also pursues an improved quality of life for all by promoting healthy behavior and life-style choices and by fostering healthful environments. Today, through essential collaboration with its public health partners (e.g., Association of Public Health Laboratories, Association of

State and Territorial Health Officials, Council of State and Territorial Epidemiologists, National Association of County and City Health Officials, National Association of Local Boards of Health, National Association for Public Health Statistics and Information Systems), CDC maintains over 100 surveillance and health information systems in support of its expanded responsibilities. Sources of data for public health surveillance are nearly as varied as the diseases or conditions of concern. Because there are multiple data sources, different information requirements, multiple, distinct users and different partners with whom CDC collaborates to obtain data for specific program areas, no single surveillance system captures all the information required to monitor the health of the public. Moreover, in addition to surveillance, public health agencies at all governmental levels operate information systems for a variety of purposes, including case management, and public health laboratory testing and results tracking.

Public health agencies clearly have a variety of information needs. However, the multiplicity of information systems that have evolved to meet these needs are in general not integrated, which does not serve public health efforts well. Modern information technology, if applied in a standards-based, coordinated way, offers the opportunity to do public health work more efficiently and with improved outcomes.

To better integrate, modernize, and enhance public health surveillance and information systems, CDC and its public health partners are implementing the National Electronic Disease Surveillance System (NEDSS). When completed, NEDSS will electronically link and integrate a wide variety of surveillance activities - meeting necessary confidentiality and security requirements - and will facilitate more accurate and timely reporting as well as enhanced public health use of disease information. Consistent with recommendations proffered in the 1995 report, Integrating Public Health Information and Surveillance Systems, NEDSS will include an Internet-based infrastructure for data accumulation and sharing built on industry standards, policy-level agreements on data access, burden reduction, and protection of confidentiality (http://www.cdc.gov/od/hissb/docs/katz.htm). A Stakeholders' meeting held in Atlanta on March 30-31, 2000 reinforced CDC's commitment to work toward the implementation of NEDSS through close collaboration with its public health partners.

Efforts to date to develop a framework for NEDSS have focused on defining areas in which standards are needed and on beginning to define those standards (See: http://www.cdc.gov/od/hissb/act_int.htm, and http://www.cdc.gov/od/hissb/docs.htm#nedss). In particular, work has focused on these areas: data architecture (development of the Public Health Conceptual Data Model and data standards [CIPHER]); secure data transfer (the Secure Data Network); common user interfaces; and tools for interpretation, analysis, and dissemination of data. The implementation of NEDSS will also depend on the development of an information systems architecture with defined elements which can be implemented in a modular way. As technology changes the NEDSS systems architecture will grow, but immediately this approach will help ensure that NEDSS can be implemented in phases in various sites and will be flexible enough to adapt to evolving commercial technologies. NEDSS will not be a single, monolithic application. By emphasizing a standards-based approach and a modular architectural framework, NEDSS can help ensure that surveillance data may be shared as appropriate, that consistent, high quality data can be accumulated, that users familiar with one system can easily use another, and that software and expertise can be easily shared across programs. In addition, this approach will advance secure methods for reporting data.

The next steps in the development of NEDSS will include continued work on developing and refining critical standards for integrated public health information systems, including advancing and refining the Public Health Conceptual Data Model. In addition, next steps will include the development of functioning prototypes that implement and evaluate NEDSS standards and information systems architecture. Development of the integrated health information and surveillance systems envisioned for NEDSS will require close collaboration among many parties. Accordingly, this award will entail considerable commitment on the part of grantees and CDC to collaborate closely in the development of these prototypes.

The ultimate goal is for NEDSS recipients to implement an information systems architecture that fosters the concept and practice of the National Electronic Disease Surveillance System. The objective is to enhance the acquisition and accumulation of quality surveillance data at the state level and the ready interchange of appropriate data and technologies with local health departments, other states,

the Centers for Disease Control and Prevention, health care facilities and other involved agencies.

The following eight NEDSS systems architecture elements have been identified:

a. Conduct and support web browser-based data entry and data management.
b. Accept, route and process electronic HL7 messages containing laboratory and clinical content.
c. Implement an integrated data repository.
d. Develop active data translation and exchange (integration broker) functionality.
e. Develop transportable business logic capability.
f. Develop data reporting and visualization capability.
g. Implement a shareable directory of public health personnel.
h. Implement a security system and appropriate security policies.

Detailed functional and technical descriptions of these architecture elements are available on the Internet at http://webdev.cdc.gov/od/hissb/docs/NEDSSSysArcht1.pdf. The elements are built around recognized national standards, de facto commercial standards that are not tied to particular vendors, and the use of Internet technologies for information interchange. Standardized elements are being emphasized in the systems architecture in order to prepare for new technologies, to facilitate technology sharing, and to strive for the rapid exchange of high quality, comparable data. Fully developed systems will have all of these elements, and in addition, will have the elements functioning well as an integrated whole. Examples and description of public health activities that could be supported by the NEDSS architecture elements is available on the Internet at:
http://www.cdc.gov/od/hissb/docs/NEDSS.attch.C.pdf.
Additionally, a glossary of terms is available at:
http://www.cdc.gov/od/hissb/docs/NEDSS.attch.D.pdf.

Applicants should request support to conduct the following activities:
Through internal review, the use of outside technical consultation, and consultation with CDC, or a combination of these approaches:

1. Assess current information systems personnel, management practices and technical infrastructure.

2. Evaluate existing personnel and technical infrastructure against the NEDSS systems functional and technical architecture elements as described above.
3. Develop a plan for the implementation of the NEDSS systems architecture.
4. Participate in national activities to foster communications about and further development of NEDSS. Include sending up to two persons to a meeting of all recipients in Atlanta during the first year of the project.

A model guidance for this assessment is available from CDC.

ATTACHMENT 7
WEST NILE VIRUS

The purpose is to assist state and local health departments in the 48 contiguous states, Puerto Rico, and the Virgin Islands to develop and implement effective surveillance, prevention, and control of West Nile (WN) virus and other arboviruses that occur in the U.S.

The WN fever outbreak has continued to expand in the northeastern U.S. in the summer and fall of 2000. The persistence of WN virus in overwintering mosquitoes in New York City in the winter of 2000 suggests that WN virus will maintain itself in the U.S. for the foreseeable future. As of October 6, 17 human cases, including one death, have been associated with WN virus infection in 2000; 14 in New York City and three in New Jersey. The lower number of reported human cases could be due to a number of factors, including the aggressive mosquito control programs implemented by the affected jurisdictions during the spring and summer months. Epizootic transmission of WN virus has expanded to include Connecticut, Maryland, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, and Washington, D.C.

The natural transmission cycle of WN virus involves mosquitoes becoming infected by feeding on birds infected with the virus. This year, many mammal-biting mosquito species have been infected with WN virus. This observation has been accompanied by an increase in WN virus infections of mammalian species other than humans and equines (e.g. bats, squirrels, cats, rabbits, and racoons). This expanded epizootic, which again occurred during the peak southern bird migration, emphasizes the need for continued vigilance for the spread of the virus beyond the outbreak epicenter. Additional information may be found in 9 MMWR articles (listed below).

Applicants should request support to conduct the following activities:

1. Develop or enhance bird, mosquito, human and equine encephalitis surveillance activities, focusing on WN virus, but including other medically important arboviruses. Activities should be consistent with published CDC guidelines entitled Epidemic/Epizootic West Nile Virus in the United States: Guidelines for Surveillance, Prevention and Control, March 2000 - available via the CDC Web site at:

http://www.cdc.gov/ncidod/dvbid/arbor/WN_surv_guide_Mar_2000.pdf

2. Conduct data analysis and interpret and disseminate results.
3. Establish or enhance capabilities to capture, identify and test mosquito vectors of WN virus.
4. Establish or enhance capabilities for avian and vertebrate capture, identification, and testing for exposure to WN virus.
5. Participate in Arbonet, the computerized national surveillance system developed to track activity of WN and other arboviruses.
6. Enhance laboratory capacity to identify WN virus infections in humans and other animal species. Testing protocols include but are not limited to human IgM and IgG enzyme-linked immunosorbent assay (ELISA), equine and other animal IgM ELISA, reverse-transcriptase polymerase chain reaction (RT-PCR), real-time RT-PCR, NASBA, antigen-detection ELISA, virus isolation techniques and virus identification using virus-specific monoclonal antibodies (requires BSL3 level containment).
7. Provide education and public outreach to reduce human exposure to WN virus and other arboviruses.

MMWR West Nile Virus Article List:

1. Centers for Disease Control and Prevention. (1999). Outbreak of West Nile-like viral encephalitis - New York, 1999. MMWR Morb Mortal Wkly Rep. 48 (38): 845-849 (October 1, 1999)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4838a1.htm
2. Centers for Disease Control and Prevention. (1999). Update: West Nile-like viral encephalitis - New York, 1999. MMWR Morb Mortal Wkly Rep. 48 (39): 890-892. (October 8, 1999)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4839a5.htm
3. Centers for Disease Control and Prevention. (1999). Update: West Nile-like viral encephalitis - New York, 1999. MMWR Morb Mortal Wkly Rep. 48 (41): 944-946. (October 22, 1999)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4841a3.htm
4. Centers for Disease Control and Prevention. Guidelines for surveillance, prevention and control of West Nile virus infection - United States. MMWR Morb Mortal Wkly Rep. 49 (02): 25-28. (January 21, 2000)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4902a1.htm
5. Centers for Disease Control and Prevention. (2000). Update: Surveillance for West Nile virus in overwintering

mosquitoes — New York, 2000. MMWR Morb Mortal Wkly Rep. 49 (09): 178-179.
(March 10, 2000)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4909a2.htm
6. Centers for Disease Control and Prevention. (2000). Notice to readers: Update: West Nile virus isolated from mosquitoes — New York, 2000. MMWR Morb Mortal Wkly Rep. 49 (10): 211.
(March 17, 2000)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4910a4.htm
7. Centers for Disease Control and Prevention. (2000). West Nile virus activity — New York and New Jersey, 2000. MMWR Morb Mortal Wkly Rep. 49 (28): 640-642.
(July 21, 2000)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4928a3.htm
8. Centers for Disease Control and Prevention. (2000). Update: West Nile activity — Northeastern United States, January – August 7, 2000. MMWR Morb Mortal Wkly Rep. 49 (31): 714-717.
(August 11, 2000)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4931a3.htm
9. Centers for Disease Control and Prevention. (2000). Update: West Nile activity — Northeastern United States, 2000. MMWR Morb Mortal Wkly Rep. 49 (36): 820-822.
(September 15, 2000)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4936a4.htm